

**PART 1****AMENDMENTS TO CLAIMS**

1. (Currently Amended) A computer based method of analysing and graphically representing an evolution of a biological system comprising:
  - determining a series of variables upon which a state of the biological system depends;
  - determining first and second subsets of said variables;
  - mapping a first subset of the variables to a first n-dimensional sub-space;
  - mapping a second subset of the variables to a second n-dimensional sub-space;
  - monitoring and displaying the evolution of the biological system utilising trajectories formed from sub-sets of the variables which defines the states of the biological system at different times, thereby using time as a parameter in the n-dimensional sub-spaces in a manner such that every point on the trajectories corresponds to at least one value of time;
  - evaluating and graphically displaying [for diagnosis or prognosis] the predicted evolution of the biological system to a predetermined state thereof as indicated by the trajectories utilising sets of predetermined values of the variables to formulate at least one n-dimensional surface representing a predetermined state of the biological system within each of the n-dimensional sub-spaces.
2. (Previously Presented) A method as claimed in claim 1 wherein the step of evaluating the evolution of the biological system comprises monitoring or predicting a progression of at least one of the trajectories to the n-dimensional surface.
3. (Previously Presented) A method as claimed in claim 1, wherein n is an integer greater than 2.
4. (Previously Presented) A method as claimed in claim 1, wherein the prediction of the progression of one of the trajectories is based on at least one other trajectory determined in the n-dimensional sub-spaces.

5. (Cancelled)
6. (Previously Presented) A method as claimed in claim 1, wherein a speed along at least one of the trajectories is depicted along the trajectory.
7. (Withdrawn)
8. (Previously Presented) A computer arranged to analyse an evolution of a biological system based on series of variables upon which a state of the biological system depends, the computer being arranged to:
  - map a first subset of the variables to a first n-dimensional sub-space;
  - map a second subset of the variables to a second n-dimensional sub-space;
  - monitor and display the evolution of the biological system based on trajectories formed from sub-sets of the variables which define the states of the biological system at different times; and
  - evaluate and display the evolution of the biological system as indicated by the trajectories utilising sets of predetermined values of the variables to formulate at least one n-dimensional surface representing a predetermined state of the biological system within each of the n-dimensional sub-spaces.
9. (Previously Presented) A computer as claimed in claim 8, wherein the evaluating comprises predicting a progression of at least one of the trajectories.
10. (Previously Presented) A computer as claimed in claim 8 wherein n is an integer greater than 2.
11. (Previously Presented) A computer as claimed in claim 9, wherein the computer is arranged to base the prediction of the progression of the at least one trajectory on the previous development of the trajectory within at least one of the n-dimensional sub-spaces.

12. (Previously Presented) A computer as claimed in claim 9, wherein the computer is arranged to predict the progression of one of the trajectories on the basis of at least one other of the trajectories determined in the n-dimensional sub-spaces.

13. (Previously Presented) A computer as claimed in claim 8, wherein the computer is further arranged to depict a speed of at least one of the trajectories along the trajectory.

14. (Withdrawn)

15. (Previously Presented) A computer readable storage medium comprising instructions to control a computer to analyse an evolution of a biological system based on series of variables upon which a state of the biological system depends, the instructions comprising instructions to control the computer to:

map a first subset of the variables to a first n-dimensional space;

map a second subset of the variables to a second n-dimensional space;

monitor and display the evolution of the biological system based on trajectories formed from sub-sets of the variables which define the states of the biological system at different times; and

evaluate and display the evolution of the biological system as indicated by the trajectories utilising sets of predetermined values of the variables to formulate at least one n-dimensional surface representing a predetermined state of the biological system within the n-dimensional subspaces.

16. (Previously Presented) A computer readable storage medium as claimed in claim 15, wherein the evaluating comprises predicting a progression of the trajectory to the n-dimensional surface.

17. (Previously Presented) A computer readable storage medium as claimed in claim 15, wherein n is an integer greater than 2.

18. (Previously Presented) A computer readable storage medium as claimed in claim 16, wherein the instructions further comprise instructions to control the computer to base the prediction of the progression of at least one of the trajectories on the previous development of the trajectory within the n-dimensional space.

19. (Previously Presented) A computer readable storage medium as claimed in claims 16 or 18, wherein the instructions further comprise instructions to control the computer to predict the progression of the trajectory on the basis of other trajectories determined in the n-dimensional space.

20. (Previously Presented) A computer readable storage medium as claimed in claim 15, wherein the instructions further comprise instructions to control the computer to depict a speed of at least one of the trajectories along the trajectory.

21. (Withdrawn)

22. (Currently Amended) A computer based method of analysing an evolution of a biological system comprising:

determining a series of variables upon which a state of the biological system depends;

mapping the variables to an n-dimensional space, where n is an integer greater than 2;

monitoring and displaying the evolution of the biological system utilising at least one trajectory formed from sets of the variables of the biological system at different times, thereby using time as a parameter in the n-dimensional space in a manner such that every point on the trajectory corresponds to at least one value of time;

evaluating and displaying the evolution of the biological system as indicated by the trajectory utilising different sets of predetermined values of the variables to formulate first and second n-dimensional surfaces representing respective first and second different predetermined states of the biological system within the n-dimensional space; and

predicting or projecting for [diagnosis or prognosis] a progression of the trajectory to the first and second surfaces for indicating the normality or abnormality of the evolution of the biological system.

23. (Previously Presented) A method according to claim 22 wherein the first and second surfaces intersect, and the order or timing of the progression of the trajectory through the first and second surfaces is arranged to be indicative of a third state based on the order in which the predetermined first and second states occur.

24. (Previously Presented) A method according to claim 1 wherein the first and second subsets of variables are subsets of the sets of variables used to formulate the n-dimensional surface.

25. (Previously Presented) A method according to claim 1 wherein the biological system is a physiological condition, and the n-dimensional surface represents a physiological state of interest.

26. (Previously Presented) A method according to claim 25 wherein the nature of the trajectory or the intersection of the trajectory with the at least one n-dimensional surface is used to make the diagnosis or prognosis based on reference sets of trajectories and/or surfaces.

27. (Previously Presented) A method according to claim 22 wherein the biological system is a physiological condition, the first and second n-dimensional surfaces represent different physiological states of interest, and the progression of the trajectory relative to the surfaces is used to make the diagnosis or prognosis based on reference sets of trajectories and/or surfaces.